

# THE CAMERA CRAFTSMAN

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VOL. 3 No. 1

NATIONAL CAMERA REPAIR SCHOOL

MAR-APR, 1957

INTERNATIONAL  
PHOTOGRAPHIC  
EXPOSITION 1957



SORRY - The Jan. Feb. issue  
of the Craftsman was not published.

## CONVENTION ISSUE !

See You There ?



# THE CAMERA CRAFTSMAN

VOL. 3  
No. 1

Published for students,  
graduates and friends of the  
National Camera Repair School

MARCH  
APRIL  
1957

CLAIR H. SCHMITT ..... EDITOR  
CHESTER R. BERNARD .... ADVERTISING MANAGER  
TOM HOLMAN ..... PRODUCTION MANAGER  
THOMAS SHEVLIN ..... ART DIRECTOR

## CONTENTS

### FEATURES:

Meet Miss Millie.....	Page 2
The Magic of Memory.....	8
Crossroads.....	12
Skilled Worker Shortage.....	12

### DEPARTMENTS:

This Month's Cover.....	12
Faculty Suggestions.....	4
Shop Shots.....	6
Living and Learning - Lifelong.....	7
This ServiShops Business.....	11
NCRS Supply Market Place.....	13
Our Students Speak.....	15
The Bellows.....	16

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## THOUSANDS TO MEET MISS MILLIE AT HUGE INTERNATIONAL PHOTOGRAPHIC EXPOSITION

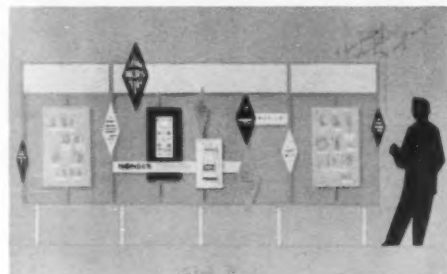
Thousands of visitors to the greatest Photographic Show ever held in the United States may leave with new ideas about how their photo equipment works. They'll meet Miss Millie - and she was built to give new ideas!

Her full name is Miss Millie Second, the gal who has time for everything photographic. Everybody loves Millie, because she is such a blabbermouth! She knows all about photo equipment and she just won't keep it to herself!

Millie is the nickname someone gave to the ServiShops Motion Analyzer, National Camera Repair School's fantastic new test instrument. She's named well, for she can split a second into thousands of parts. Miss Millie Second, the ServiShops Analyzer, will be seen by the public and photo people from all over the world, come March 22-31 in the tremendous Armory at Washington, D. C.

Dealers, photographers, manufacturers and amateurs alike will have the opportunity to see and work with Millie. They'll use her to test shutters, synchronizers, flash contacts, motion picture cameras and projectors and other photographic apparatus of all kinds. Millie is the glamour star of her act, for she shows a graph-like picture of photo equipment in action on her own Analyzer Screen. She'll spend her time knowing all and hiding nothing at the NCRS Booth #146B.

Also on display will be many other job-lighteners for both budding and experienced camera craftsmen. The exhibit will include tools and instructional materials used in the widely acclaimed National Camera Repair School Training Programs. Those unable to attend the Gala International Event can learn more by writing direct to National Camera Repair School, Box 174C, Englewood, Colorado, U. S. A.



## THIS MONTH'S COVER:

Meet Miss Millie Second, the ServiShops Motion Analyzer, and friend, Delphine King. She is anxious to show everybody that she is equally at home making tests on a dealer's counter, a repairman's bench, an engineer's lab table, or a manufacturer's assembly line. Meet Miss Millie at IPEX! Millie is the beauty on the outside. They've both got class, but Millie's no luxury.

## SECURITY

I do not want anybody to convince my son that someone will guarantee him a living. I want him rather to realize that there is plenty of opportunity in this country for him to achieve success, but that whether he wins or loses depends entirely on his own character, perseverance, thrift, intelligence, and capacity for hard work.—JOHN L. GRIFFITH, York Trade Compositor, hm, York Composition Co.

## The Director's Viewpoint

By SAMUEL L. LOVE



1957 promises to be one of the greatest photographic years in history. The tremendous World Fair of Photography, the International Exposition to be held in Washington, D. C. March 22nd to 31st, will point up the fantastic strides taken in the past ten years and leading to a growing future. Unquestionably the biggest photographic exposition ever held in the United States, IPEX likely will be the greatest in the world.

Photography has come a long way since the one-box-camera-per-family days. The modern amateur photographer is far better equipped than his professional ancestor. Even the least expensively outfitted 1957 amateur uses equipment of high mechanical complexity.

The growth in amateur photography is acknowledged, but perhaps the most important field in which rapid growth is apparent is industry.

Hardly an effort exists which is not being documented, analyzed or aided in some other way by photographic processes.

Just what is Industrial Photography? Industrial Photography virtually defies classification. Under its broad heading may come every conceivable type of photography. At first consideration, you might imagine that industrial photography consists primarily of high-speed motion pictures or stop-action photos of industrial processes, test procedures, or other photography used exclusively for analyses and research. This type of work is only a small of the overall industrial photo picture. Thereproduction processes, from blue printing to graphic arts, are all important to this photo giant. Macro and Micro-Photography are vital phases. Many aircraft and other manufacturers use photographic processes to provide layouts and cut time in the actual fabrication and production of parts. Many modern "printed-circuit" techniques are completely photographic in nature. Technical photography in almost infinite variety is employed to aid or speed research, production and testing processes in modern plants.

But photography in industry runs a much wider gamut than the technical alone. Purely documentary photography -- the recording of steps in a process, the picture story of the production of a plant, an airplane or an industrial empire, is another vital way that photography becomes the tool of industry. A company's public relations often hinge on the type of photographs made available for general distribution.

Even portraiture, used in industry, may range from the extremes of simple identification photos made of each employee to quality portraits made of executives for use in publicity releases, house organs and other publications.

The most esthetic photography, in the form of beautifully composed photographs of company structures, workers, machines or other products, property or activities of modern business, also finds its place.

Last, but not least important, is modern photography in advertising. This also can be classed as industrial photography and, in itself, takes on all the forms already mentioned. Glance through the advertising pages of current magazines and you will find photographs used which extend from stop action movie frames to photographs and beautifully composed scenes.

This huge field is regularly making greater and greater demands on the camera craftsman. The competition of today's business cries for new ideas. Whether it is special equipment needed to do an unusual job, or the just plain skill necessary to maintain the growing quantities of photographic equipment, your place in industrial photography is growing by leaps and bounds.

Be aware of your opportunities. Make it your responsibility to keep abreast of the constant changes and needs in industry for photography. A dozen specialized fields yet to develop for the camera craftsman are but seeds today in industry. Activity is going on all around you. Your largest problem may be just deciding what field you will want to enter. This is not as difficult as it might at first seem. Be generally, and genuinely, interested in the future you have in industrial photography, then, to whichever star you finally hitch your wagon, your success can be assured.

**Filled to Capacity**  
**Summer wardrobes once again**  
**Reveal familiar sights.**  
**Gals wear pants that they call**  
**"slacks"**  
**That look much more like**  
**"tights".—JACK HERBERT. 21**

## Camera Pickup Case \$10.75



Don't get caught far from your car with both arms full of repair jobs! Insure yourself against dropping a customer's camera!

This STURDY SPONGE-LINED Case provides you with full protection. Inside dimensions: 18 3/4" X 10 1/2" X 8 3/4". Plenty of room!

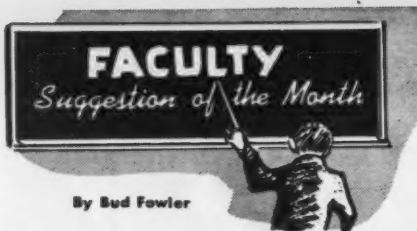
## NCRS VISITORS



Mr. L. R. Wilkinson, of Galesburg, Illinois, is shown as he and his friend get a sneak preview of the operation of the ServiShops Motion Analyzer. The prototype model was undergoing some very exhaustive tests in the Headquarters ServiShops at the time of Mr. Wilkinsons visit last fall. Mr. Wilkinson, Student #453, is the Lecture Librarian of the Photographic Society of America, and was attending the convention in Denver at that time.

## PRODUCTION

A worker in the U S today can turn out about six times as much as his great-grandfather 100 yrs ago. If this ascending curve continues, his great-grandson 100 yrs from now will be able to produce in one 7-hr day all that a man produces in the present 40-hr wk.—*Indiana Teacher.*



By Bud Fowler

The importance of camera design and theory. Looking back to your very first lesson you may recall this statement on your quiz. At that time, the question and answer may have seemed relatively unimportant, but as you progressed further into your course and started taking in actual repair work, its importance grew tremendously.

Let's take that Stutterflex 6x6 you have on your bench. It hasn't been covered in your lessons. Do you know why it isn't working or how it is supposed to operate? You may even have the disassembly instructions in front of you, but they are practically useless in determining where the malfunction lies or how to correct it. This is the point where you either sink or swim. Naturally, practical experience on a similar mechanism would be of help at the time, but a complete understanding of the design and theory behind that similar mechanism is what really counts. Without it, you are in likeness to the repairman in a shop who works on only one make and model of camera. This man's practical experience cannot be denied. He can disassemble and reassemble his pet Confound shutter blindfolded and in record time. The alarming thing is that if you put a similar but different mechanism in front of him, he wouldn't have the faintest idea of what to do. After all those years of familiarity with that single mechanism he never stopped to realize just why and how it actually operated.

A good knowledge of camera design and theory is indispensable to the repairman who is going to handle a wide variety of equipment. Standardization is practically an unknown word in the camera industry. The manufacturer is constantly making improvements in his products, even on his old line "tried and true" models. Many times these changes are made without notification. Would you be able to spot these changes and why they were made in a familiar mechanism? Could you recognize and correct a malfunction in equipment unfamiliar to you? If not, the method, manner and presentation of material in your course is not being absorbed properly!

## ONE SPECIAL JOB OPENING!

If you are now earning \$6000 or more, as a camera repairman, you may qualify for this \$7200 position. Future unlimited. Give complete background information in first letter. Write to NCRS Placement Service, Box 174, Englewood, Colorado.



## NATIONAL CAMERA REPAIR SCHOOL

Box 174  
Englewood, Colorado

I am interested in the opportunities and advantages of a career in Camera Craftsmanship. Please furnish me with complete information about your training program.

Name \_\_\_\_\_ Age \_\_\_\_\_

Street \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_

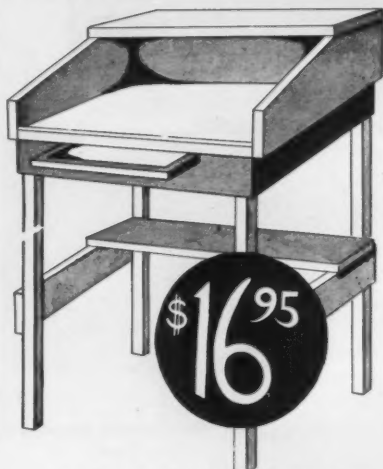


If you have a friend or relative who may be interested in the money making opportunities that exist today in the camera repair field, have him or her fill out this coupon and mail it to the National Camera Repair School, Box 174, Englewood, Colorado.

# NCRS SUPPLY CLOSEOUT

*Take advantage of these bargains!*

## CAMERA REPAIRMAN'S WORK BENCH



We are stuck with a few of these DOGS, and offer them at a good saving to you.

This jeweler's type Bench, made of 3/4" pine and finished in neat Battle Ship Gray, is ideal for work or study. It takes minimum floor space, is topped with sturdy linoleum and equipped with a canvas catch tray.

Work Level:  
42" above floor

Table Top  
Work Area:  
34 1/2" X 21 1/2"

Top Shelf:  
9" wide, 5" above  
table top.



### NEW SERVISHOPS ANALYZER LITERATURE AVAILABLE

National Camera Repair School today announced the publication of a new descriptive booklet. It covers the ServiShops Motion Analyzer test instrument, developed and manufactured by the School.

Among the features highlighted are speed of operation, accuracy and versatility. The new booklet explains some of the many tests that can be made with this precision electronic instrument.

The ServiShops Analyzer is an oscilloscope type instrument, built around an unusual working principal. The user can time and examine almost any movement, from the action of a set of contacts, a shutter or a flash gun, to a spinning gear or an operating movie camera. Designed primarily for testing photographic apparatus, the motion testing unit has also found acceptance in other fields where the timing of movements is critical.

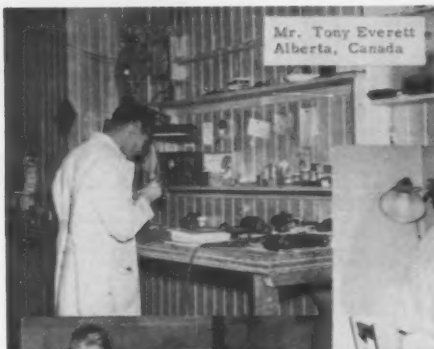
The new Analyzer has been made easy to use and interpret. In this way, understandable demonstrations can quickly be made either for or by the owner of any device being tested. Despite its simplicity, the machine provides the high accuracy demanded in laboratory, research and production work, as well.

The pocket sized booklet describes several of the other features of the SS Analyzer, and includes technical specifications. Copies may be obtained, at no cost, from National Camera Repair School, Box 174C, Englewood, Colorado.



## SHOP SHOTS

Here's where ServiShop Craftsmen learn and earn. Made a change in your shop lately? Make a quick pic or two and send 'em in. Share your ideas.



Mr. Tony Everett  
Alberta, Canada



Mr. Joseph Bronson  
Detroit 27, Michigan



Mrs. Margaret E. Epprecht  
Pleasant Hill, California



Mr. Verne Comp  
Three Oaks, Michigan



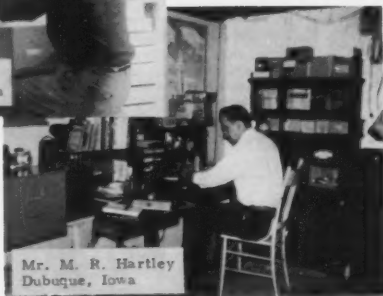
Mr. Gene Karels  
Waco, Texas



Mr. Wladimir W. Schroeder  
Hamden, Connecticut



Mr. Doyce E. Croy  
Comanche, Oklahoma



Mr. M. R. Hartley  
Dubuque, Iowa



# LIVING and LEARNING A LIFELONG

By Chester Bernard

Way back yonder, when I was a boy, our idea of speed was based on a minute. Our pet expression for speed was "A mile a minute". This expression was intended to give the idea of blinding, dazzling speed. Then I heard automobile people talking about 3000 or 4000 R. P. M. in discussing engines.

When I saw 1/500th second marked on the front of a camera, I wondered what wonderful new developments the world was going to see next. Along before World War II, I bought a camera that had 1/200th marked on it. Whew.

And now, now I have seen a second chopped up into 5000 bits of intelligence. I have never in my life put a screw driver to any piece of photo equipment, yet, with the new ServiShop Analyzer, I have become an expert in observing the real action of various functions of my camera. I can tell if 1/500th of a second is really that, or if it is 1/400th instead. I can tell if my flash attachment is set so it is at its height of brilliance when my shutter is wide open. I can know that my contact points close and stay closed for the required time. I can also know about many other operations of my camera. This is all possible even though I know nothing more about the technicalities of photo equipment than any other camera user.

You may ask yourself why should an ordinary camera owner need to know such data. Because I am like the guy that buys the camera. With the Analyzer I can be shown that my cheaper camera cannot do the job of photography the best way. With the SSA you can show a customer real good reasons why he can improve the quality of his pictures.

Can you think of a better way to sell better equipment than by actual demonstration? Show the customer how a better camera gives him properly controlled conditions for every picture he shoots. SHOW HIM how better cameras produce better work and help to assure him that he will not miss the one big shot because of erratic camera operation.

The value of the SSA as a shop instrument is undoubtedly great, but it seems to me that it may have much more value as sales aid. The credo of the salesman has always been to demonstrate and dramatize his products. You can surely raise the average sale of photo equipment when you can SHOW your customer what it means to have precision equipment.

## DON'T MISS THIS ARTICLE!

The latest issue of "PHOTO SCIENCE AND TECHNIQUE", the Technical Journal of the Photographic Society of America, carries a very descriptive article on the "SERVISHOPS MOTION ANALYZER".

If you do not receive this publication regularly, be sure to obtain a copy from your local camera club or Public Library. The article is entitled "A New Approach to Photographic Aperture Testing". Reprints are available from N. C. R. S.

## Deluxe Model Portable TOOL & WORK CABINET

Because of a quantity purchase we are able to offer this Deluxe Model Cabinet at this special price.

Only **\$15.95**

Sturdily built of wood and masonite with attractive brass hardware, it is ideal for the student who has not yet built his workshop (with a section to hold the Camera Repairman's hand book and lesson Text Binder), or for the busy Camera Repairman who needs a complete working space in which to keep and carry tools on outside calls.

Easily carried and stored, it measures 18 x 20 x 6 3/4 inches.



# THE MAGIC OF MEMORY

by Harold Clark \*

Breathes there the man who hasn't sulked, at one time or another, over the joke that could have made him the life of the party . . . if he had only been able to remember it at the time? Is there a woman who has never forgotten one single item at the grocer's? What child wouldn't part with a portion of his weekly allowance for the grammatical rule that is the difference between passing and failing an English examination?

These may appear minor crises, but what of the broker who pulls a blank over the latest stock quotation? Or the salesman who can't recall his customer's order? Or the actor who fluffs his lines?

The rewards of a good memory can be lavish. Success, popularity, and happiness often go hand in hand with the ability to remember names, dates, telephone numbers, faces and facts.

Indeed, the importance of accurate memory is such that it's a rare executive who doesn't use a dictating machine. These machines, originally used solely for correspondence, now double as a memory receptacle for that mass of information which must be recorded and filed for future action. Even telephone conversations these days are being recorded by the mechanical memories.

Aristotle, reputed to have known everything there was to know in his time, placed the seat of memory in the soul, which was located, he said, in the heart; hence our expression, "to know by heart".

But he was wrong. It isn't that simple. In fact, it isn't simple at all.

In the first place, there is no single thing capable of being called memory. There are as many kinds of memory as there are senses and combinations of senses. For example, we all "remember" what an orange is. It's spherical, orange in color, has a certain taste, and feels a certain way. Our "memory" of an orange is thus an ensemble of many physical operations.

Secondly, a very complicated process occurs in the making of a memory. So difficult is it that psychologists are not really sure they understand how it works. But this is what they think happens: The 10 billion nerve cells in the human brain interact in various ways. As impressions hit them, they undergo tiny changes in structure. Naturally, the harder hit they are, the more lasting the change in structure. If they are hit hard enough or often enough, the change lasts, and you "remember". Conversely, if they are not hit hard or often, the change doesn't endure, and you "forget".

You can't change the structure of those nerve cells for long unless you try. And as you age, your nerve cells become less plastic. That's why older people have more difficulty remembering recent events than recalling experiences and facts from their youth, when their nerve cells were more impressionable.

However, no matter what your age, you can improve your memory through repetition, studying your information longer, and establishing a mood of receptivity. In short, pay attention.

Here are some additional tips:

1. Intend to remember. This entails conscious effort, but a memory can only flourish in a proper climate of friendliness.
2. Understanding the meaning of what you're trying to remember.
3. Organize what you know into a meaningful pattern. It is easier to recall these things that appear logical to you.

4. Become genuinely interested in what you want to remember. No boy really enthralled by baseball has trouble remembering all the players' batting averages.

5. Use as many senses as possible. For example, if you are introduced to a stranger, look at him and repeat his name aloud -- "Mr. Smith? So glad to meet you, Mr. Smith." You are then using your senses of sight and hearing and they reinforce each other.

6. Associate what you want to remember with what you know. Every fact you already possess is a "hook" on which you can hang some new fact. This is the main reason why people who know several languages readily learn additional ones.

7. If you cannot find a logical association for a new fact, invent your own. And the wilder the better. If you want to memorize the Gettysburg Address and the first letter of each sentence forms a code for you, fine. Use it.

Perhaps the most important trick to learn is to separate the wheat from the chaff. Don't try to remember everything. A merciful Providence has endowed us with the ability to forget, a gift we take for granted. Imagine remembering everything you see every day, from the ceiling at the moment you awaken to the light switch just before you retire! With the average life expectancy of 70 today, it is estimated that the normal individual can look forward to 15 trillion (15,000,000,000,000) "bits" or units of information in a lifetime.

Much of this staggering load has been shifted to the gigantic shoulders of the wondrous "memory monsters" created by science. One such device, capable of digesting and remembering millions of facts, resembles a futuristic kitchen and requires expert technicians to make sense out of its maze of wires, lights and buttons. The latest entry in the field is a portable "memory mite" called the Dictaphone Dictel, a camera-sized recorder which is shorter than a pencil, weighs less than three pounds, and can store an hour long talk.

But science notwithstanding, a cultivated memory can still be your greatest asset. Ethel Barrymore got her first big chance when her stage manager discovered she had memorized every part in his Excellency the Governor and was ready to step into the leading lady's shoes at once. Arturo Toscanini was "discovered" the night he substituted for another conductor on the spur of the moment. He, of all men in the orchestra, knew the opera score by heart. Neither Miss Barrymore nor Signor Toscanini have unusual memories; they simply make full use of the powers they have. All it takes is effort.

And wouldn't you like to come up with that long-lost gap at just the right moment?

\*Dictaphone Corporation





ONE OF AMERICA'S OLDEST PHOTO-OPTICS MANUFACTURERS, THE CHARLES BESELER COMPANY COMMENTS ON THEIR REPAIR SERVICE NEEDS.

by J. J. Kusche

The products of the Photographic Division of the Charles Beseler Company carry a "lifetime guarantee". This guarantee is extended to the original purchaser when the product is acquired from a Franchised Beseler Dealer and remains in the hands of this original purchaser.

Under this Warranty, repairs are made to all Beseler Products without charge if the malfunction results from improper manufacture or materials. We have had instances where repairs required prompt and local attention and in such instances have always recommended that the user turn it over to whatever type of repair stations are locally available. Regrettably, such service stations are rare and when found, do not usually come up to the expectations of either our customer or ourselves. We feel that a school such as NCRS, can help fill this vacuum, a sorely needed service in the photographic industry. There are too few photographic repair men available in this country, and the service that National Camera Repair School is rendering through the creation of efficient repair people is bound to reflect favorably on the industry, & its manufacturers, and of course to the financial remuneration of the repair man himself.

We think NCRS is a welcome asset to our industry, and of course will be glad to cooperate in any way possible to help further the aims of National Camera Repair School.

\*Manager

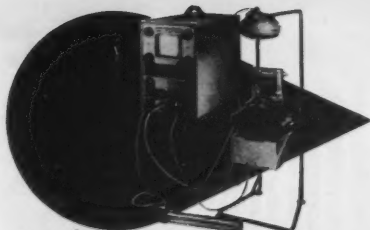
## TAXES

How about letting the meek inherit the earth right now? Their inheritance tax payments would surely lower our income taxes.

ANN SCHADE.

## SPECIAL CIRCUIT DESCRIBED

The January issue of "ELECTRICAL DESIGN NEWS" contains an article explaining the design of the circuit which makes the ServiShops Motion Analyzer possible. Reprints of this article may be obtained from NCRS Supply on request.



## FAST SERVICE MEANS SALES USE A SERVISHOPS ANALYZER

The low cost instrument, that gives you top accuracy in testing photo equipment. Whether it's your customer's equipment, or off-the-shelf, you can make the facts clear! Add to your customer's confidence to increase your profits. You can check almost any photo equipment in a few seconds.

For more information: Write;

NATIONAL CAMERA REPAIR SCHOOL  
BOX 174-C, ENGLEWOOD, COLORADO

See it at BOOTH No. 146-B

INTERNATIONAL PHOTO EXPOSITION  
WASHINGTON, D.C.  
March 22nd - 31st

INTERNATIONAL  
PHOTOGRAPHIC  
EXPOSITION 1957



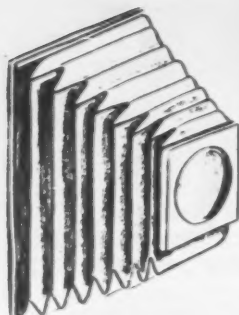
WASHINGTON D.C. MARCH 22-31  
NATIONAL GUARD ARMORY

You Are Cordially Invited  
to attend the greatest photographic show ever staged  
anywhere in the United States . . . presented by the  
entire photographic industry!

It's the Second Biennial  
INTERNATIONAL PHOTOGRAPHIC EXPOSITION  
WASHINGTON, D. C.  
NATIONAL GUARD ARMORY  
MARCH 22-31, 1957

Come see us and visit with us in Washington this Spring!

SEE the ServiShops MOTION ANALYZER in action  
AT the NATIONAL CAMERA REPAIR SCHOOL'S  
BOOTH No. 146-B



# BELLOWS

... from NCRS Supply

## Discounts:

1 to 9.....	20%
10 to 19.....	25%
20 up.....	30%

YOU'LL NEED THEM! SEND YOUR ORDER NOW! YOUR CHOICE of the most popular bellows stocked. Take advantage of the discounts listed.

Bellows Number	Camera	Shutter	Price
<u>Vest Pocket Type Bellows</u>			
A03	Jiffy Kodak		1.80
A04	Kod. Bantam, Doublet or f/6.3		1.80
A05	Kod. Bantam, f/5.6 or f/4.5		1.80
A01	V. P. Model A		1.50
A02	V. P. K. Model B	V. P. K. B	3.00

## No. 1A and 2A (116) Type Bellows

B01	1A Auto. Kod. Jr.	BBS	2.20
B03	1A Auto Kod. Jr.	Kodex	2.20
B04	1A P. K. Jr.	Kodex	2.20
B04	1A Pocket Kod.	Kodex	2.20
B02	1A Pocket Kod. Series II	BBS	2.20
B01	2A Fld. Auto. Br.	BBS	2.20
B03	2A Fld. Auto. Br.	Kodex	2.20
B01	2A Fld. Cart. Premo	BBS	2.20

## No. 1 and 2 (120) Type Bellows

C02	1 Kodak Jr.	BBS	1.80
C03	1 Kodak Jr.	Kodex	1.80
C01	1 Kodak Special Model A		1.70
C07	1 Pocket Kod. Jr.	Kodo or Kodex	2.00
C06	1 Pocket Kod. Series II	Kodex	2.00
C04	2 Fld. Auto. Br.	Kodex	1.80
C05	2 Fld. Auto. Br.	BBS	1.80
C04	2 Fld. Cart. Premo	Kodex	1.80
C05	2 Fld. Cart. Premo	BBS	1.80

## Six-16 Type Bellows

D02	Six-16 Fld. H. E.	Kodal or Kodon	2.60
D01	Six-16 Jiffy		2.60
D01	Six-16 Jiffy Series II		2.60
D02	Six-16 Kodak (New Model)		2.60
D02	Six-16 Kodak (Slide Block Model)	Kodal or Kodon	2.60
D02	Six-16 Kodak, Vigilant or Monitor		2.60

Bellows Number	Camera	Shutter	Price
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## Six-20 Type Bellows

E03	Six-20 Fld. H. E.		1.80
E05	Six-20 Jiffy (Late Model)		1.80
E05	Six-20 Jiffy Series II	Kodal or Kodon	1.80
E01	Six-20 Kodak	Kodon	1.80
E04	Six-20 Kodak (Late Model)		1.80
E06	Six-20 Kodak, Senior, Vigilant or Monitor		1.80
E02	Six-20 Kodak (Slide Block Model)	Kodal or Kodon	1.80
E07	Six-20 Kodak Tourist		2.40

## 2C (130) Type Bellows

G01	Fld. Auto. Br.	BBS	2.40
G02	Fld. Auto. Br.	Kodex	2.40
G01	Kodak Jr.	BBS	2.40
G02	Kodak Jr.	Kodex	2.40
G03	Pocket Kodak	Kodex or BBS	2.40

## No. 3 (118) Type Bellows

H01	Fld. P. K.		2.40
H02	Kodak Series III	Kodex or Diomatic	2.40

## No. 3A (122) Type Bellows

J01	Auto Kod. Jr.	BBS	2.60
J02	Auto Kod. Jr.	Kodex	2.60
J01	Fld. Auto Br.	BBS	2.60
J02	Fld. Auto Br.	Kodex	2.60
J01	Fld. Cart. Premo	BBS	2.60
J02	Fld. Cart. Premo	Kodex	2.60
J02	Fld. H. E. Model B	Kodex	2.60
J01	Fld. P. K.	BBS	2.60
J04	Kodak Series II and III	Diodak	2.40
J03	Pocket Kodak	1 Kodex	3.60

## 620 - 616 Agfa-Ansco Bellows

K01	620 Plenex-Readyset	Front Frame	1.20
K02	616 Plenex-Readyset	Front Frame	1.20

## Retina

N-1	Ito Camera		1.80
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### NEWS from NCRS

A NEW CONCEPT IN TEST EQUIPMENT

News Release

S. L. Love, the Director of National Camera Repair School, today announced the production of a unique test instrument called the ServiShops Motion Analyzer. Combining an unusual electronic idea with the time-honored principles of oscilloscope testing has made possible the development of the instrument which solves dozens of testing problems.

The ServiShops Analyzer presents a clear, graph-like picture of photographic equipment action in easily interpreted form. Among its many functions are: Shutter speed testing, synchronizer testing, flash contact testing and motion picture camera and projector timing. It is possible to check any shutter, either synchronized or non-synchronized, between-the-lens, behind-the-lens or focal-plane. It makes possible such tests as flash-bulb output, electronic-flash output and others which formerly required several test instruments costing thousands of dollars.

For the camera repairman's convenience in testing flash synchronization, the ServiShops Analyzer imitates the load of one or two flash bulbs when checking synchronization. In order to eliminate the battery drain normally involved when adjusting a flash synchronizer a button on the instrument itself may be pressed to trip a solenoid while making a series of tests.

The heart of the ServiShops Analyzer is its easy-to-use, easy-to-calibrate timing system, extending over the range from .0001 second to 9.99 seconds. The accuracy of the instrument may be checked and/or adjusted quickly and easily by the user at virtually any range to within 1%.

The new instrument has evoked considerable comment because of its applicability in many fields other than photographic. For example, the sound of gearing and the vibration of various mechanisms can be graphically analyzed without any electrical connection being necessary. Rotational speeds of up to 20,000 revolutions per second can be measured, making the unit a most versatile tachometer.

"It is conceivable", said Mr. Love, "that the new ServiShops Analyzer will do a better job, in many applications, than far more expensive equipment now being used."

For the first time, an instrument with "counter-top ease-of-operation" and laboratory accuracy is available at a very moderate cost. Full details of the operation and price of the amazing ServiShops Analyzer can be obtained by writing to the National Camera Repair School, Box 174C, Englewood, Colorado.



### CROSSROADS

Dear Mr. Schmitt:

I have a problem that seems to grow larger with each lesson learned and every camera repaired. I have also given some careful study to all phases of this coming catastrophe and have not arrived at a satisfactory answer.

What I have to ask you in no way casts any reflection on your methods of teaching or material used for study. I am well satisfied with your course as presented, but, there still will be the problem crop up as to the proper procedure to repair the countless number of both still and movie cameras - projectors and not to mention the hundreds of pieces of miscellaneous equipment.

I am far enough along now, for this situation to appear on the surface, at least, very alarming.

I liken myself to a boy entering the house of mirrors for the first time, and seeing his reflections from all angles and wondering how the devil will he ever penetrate this maze of conflicting images. But, I am old enough to know where there's a will there's a way.

Now, to probe deeper into this subject, and looking through camera magazines published each month, all you can observe in said magazines is the fact that everybody seems to be manufacturing cameras. Especially 35 MM. Take 35 MM for example. It is true that they all work similar in construction. You become familiar with one and along comes another with every thing just a little bit different. I know this problem all too well to my sorrow, because I attempted to dis-assemble the latter camera and everything seemed to fall apart or jump up at you, where the former camera parts remained in their respective places. This situation can become nerve racking when you're working on customer's equipment.

Now, big question is, how do we co-ordinate all this mess into a whole? How do we find the Key that unlocks the door to smooth operation? You cannot go blind into this situation without some sort of guidance. Also, you people cannot teach us about everything made. There has to be a solution to every cross word puzzle.

One suggestion I have thought of, do we try to pick up service manuals from every manufacturer of equipment? Would they send the manuals if we requested them? Do we only attempt to repair only a few makes and specialize in them, or do we attempt everything that comes along? In a way, this last question answers itself if you want to make a living in ones own community. If you specialize it becomes necessary to advertise for work nationally. Or so it seems to me.

As to manuals, I do have a complete set of these from the Eastman Kodak Company. Everything they make is very well represented for the repairman. This, of course, is only a drop in the bucket to all the knowledge that will be necessary. I am also convinced this problem confronts all the rest of your students who do not have the benefit of a job with some good competent repairman who has been in business for years. I have a suggestion. Do you think this problem warrants enough attention to formulate a working plan in a general way to possibly be printed in your Camera Craftsman magazine? If not, I personally would like some help in this matter.

Continued, Page 12

11

# ServiShops

I am not worrying about business. It is here. I have been approached directly and indirectly from at least two or three of our better camera stores. But I lack just the right confidence to jump into this with both feet. In other words, I want to do the thing right with proper methods, not guess work. A lot of this equipment runs into money. Experimenting, as far as I'm concerned is out.

So, to sum it all up, what would be your suggestion to help me clear away some of the cobwebs? Thank you, anyway, for any help you can possibly give me.

Chester C. Crumrine  
Indiana

Dear Mr. Crumrine:

CROSSROADS is a very good title for the dilemma you describe in your letter.

This problem confronts many of your fellow NCRS Students. It's the same problem that plagued the staff at NCRS when your course in Camera Craftsmanship was started.

A few American manufacturers do, as you know, publish manuals covering the servicing of the apparatus that they manufacture. Unfortunately, very little of this material is in the form of actual step-by-step instructions. Only one or two foreign manufacturers have any literature available, and then only parts lists. One of the future plans of NCRS is the compilation and publication of information covering individual cameras and photo equipment. Manuals of this kind will cover disassembly and reassembly only and will not include information on specific repairs other than very common malfunctions. One of the problems of this sort of plan is that most manufacturers have the habit of changing specific parts of assemblies without apparent change either in appearance, name or model number. Thus any publication can only serve as a guide to cover the piece of equipment being described. Regardless of how thorough or exacting such instructions may be, there will still remain the problem of small changes made without prior notice by the manufacturers. Even if you manage to acquire a complete set of manuals on every camera manufactured at the present time, you will still be confronted regularly with models that differ in some respect.

Regardless of what NCRS does, the problems that you describe in your letter are going to be present to some degree. Your only answer, Mr. Crumrine, is the one that you yourself have given. That is a comparison of the problem to a Crossword Puzzle. Of course, it would be impossible to learn how to solve every crossword puzzle that could ever be designed. The only way to learn to solve such puzzles is to learn the words and the meanings of the words that are needed to arrive at a solution. Camera Repair is comparable. Understanding this problem has been the guiding note in developing the NCRS Course.

National Camera Repair School does not teach you, or attempt to teach you, how to repair a camera or several cameras but rather it teaches you how to repair any camera.

A major problem in camera repair as it concerns a number of manufacturers is the fact that nomenclature is not standard. This is another question that your training is attempting to answer. Eventually, NCRS will help to develop standard nomenclature for all camera parts. This means that you will at least know some words for the crossword puzzle. Following the same analogy, words alone are not enough to solve a crossword puzzle. You must know the meanings of the words. Thus, your NCRS course is devoted to teaching you why each part exists and what its proper function is.

Certainly, it is nerve racking to be confronted by an expensive piece of photographic equipment without being positive about a screw being right handed or left handed. You must develop a lot of patience to be able to sit and look at an expensive camera for thirty minutes, trying to decide which knob or screw should be removed first and what, if any, parts will fall off on the inside if you remove the wrong screw. Your course covers many variations of photographic equipment. It certainly cannot cover every possible way in which a shutter or camera can be timed, as you recognize. However, because your study program includes carefully chosen examples, you will become very familiar with fundamental requirements of all cameras. Add to these the many variations described and others that you figure out for yourself, and you will be pleased at the amount of knowledge that you have already gathered. When you are confronted with a new variation, this fund of background knowledge will help you solve new mysteries constantly.

Of course, caution must be practiced at all times. At the same time, you must have confidence in the fact that the equipment is not a stranger to you. It is only a variation of a design with which you are already familiar. As you say, experimentation can be dangerous. Thoughtful analysis and a cautious approach can eliminate nearly all the danger. Just as in all businesses and life itself, everything you do will be a success if you work on the principal of calculated risk.

Your NCRS Staff is always ready to help you and welcome your problems with open arms. Remember that we understand your problem. Sometimes we have no more information concerning specific equipment than you too might obtain from various manufacturers. It's the goal of your School to encourage you and your fellow students to arrive at your own solutions whenever possible. This is the best way to build your experience and confidence in order to become a true camera craftsman.

C. H. Schmitt  
Instructor

## SKILLED WORKER SHORTAGE HURTS REPAIR WORK

As reported in "Photo Industry News" Dec. 3rd issue.

NEW YORK, Sam Hershon, president of Archinal Camera Repair, Inc., with headquarters in this city, warned that the present shortage of skilled repair men will become much more serious during the next two years.

Mr. Hershon who just returned from an extensive tour of Germany and Switzerland where he sought skilled mechanics for his repair business, said he was unable to find one man willing to give up his work in Europe.

"The same shortage of skilled men exists in Europe," he said.

He urged establishment of an apprenticeship program in factories as another step toward producing men acquainted with photographic equipment. He emphasized that too many men know only the operation of rangefinders or shutters, for example, but cannot handle a complete overhaul job.

"The trend toward built-in equipment makes it more important for repair men to have over-all knowledge," he said.

Improper repairs or lack of trained men will hurt present confidence of the public in the ability of camera shops to handle this work.

The Archinal Camera Repair Company, in business 53 years, estimates that in New York alone, there are 40,000 to 50,000 cameras repaired annually.

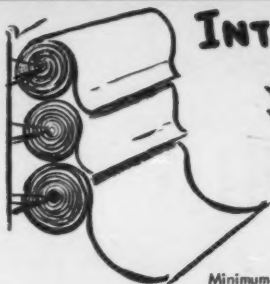
## SUCCESS—Failure

The question is not whether you have failed, but whether you are content with failure. — Friendly Chats.

NCRS

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Minimum order: 1 yard. Over 10 yards: write for special discount.

CONGRATULATIONS MR. HANSEN: Everyone here at NCRS got quite a chuckle over your announcement, it is very clever.



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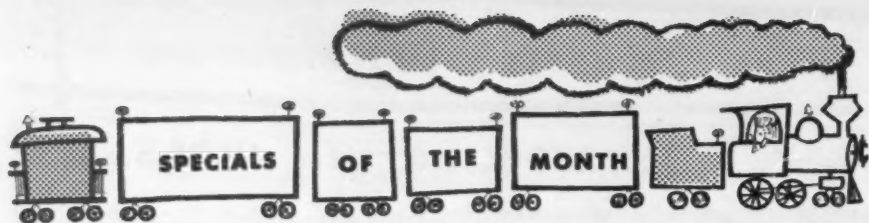
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#302-1/2 - 2-1/2" focus; no headspring.  
Regular \$1.25, SPECIAL \$1.00

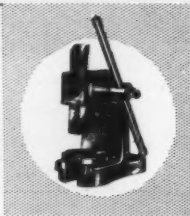
#322-1/2 - 2-1/2" focus; headspring.  
Regular \$1.75, SPECIAL \$1.50

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### arbor press

Designed for light production and assembly work, this model has a large opening in base for arbor work and is equipped with a slotted tab.plate.

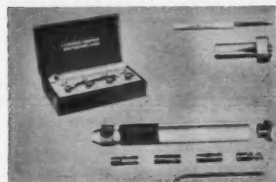
Presses up to 1 ton.



Price f.o.b. Denver **\$26.00**

#### NOTICE! URGENT!

The NCRS Placement Service is flooded with requests for competent Camera Repairmen. There are very good positions open throughout the country. If you are experienced, and interested in locating elsewhere, the NCRS Placement Service may be able to help you. Write directly to NCRS Placement Service, Box 174, Englewood, Colorado.



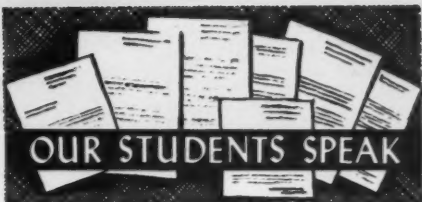
### MORRIS E-Z Tap and Die Set

SIZES: 00-90 0-80 1-72 2-56

Here is a set of precision tools that any craftsman or tool maker would be proud to own! Set is put up in a fabric lined metal case with springhinge cover. Tools are held in a wood block base. Taps are contained in the hollow handle of the Holder.

CONTENTS: 4 Taps, 4 Dies, 1 E-Z Tap & Die Holder, 4 Bushings, 1 Set-Screw Wrench. PRICE COMPLETE **\$12.50**

MORRIS CARBON STEEL TAPS AND DIES are precision quality throughout. Taps have a plain round shank of the same diameter as the threads. Dies are 3-prong type 7/32" O.D.



### OUR STUDENTS SPEAK

I received today your shipment No. 21 under invoice 8616 and I feel that some comment is in order in connection with item 3, 1 pair wire stripping pliers.

I have had many visitors from time to time who have toured through my shop and most of them have invariably made the same comments, the essence of which has been that it seems to them that hardly any addition could be made to make it completely equipped, with due consideration of the fact that it is primarily a home shop set up to gratify a fondness for the collection of tools in the pursuit of a hobby or hobbies.

While I have a wire stripper and crimper as such, this is my first introduction to one having the feature of the threaded screw cutter. As I look back over the times that I have laboriously threaded a nut to clear the thread it makes me wonder how long this tool has been available, and if for long, how it is that I have missed it. While it is a small item considering the hundreds of tools that I have at my finger tips, it certainly IS an addition to my shop.

Martine E. Shedd  
Eugene, Oregon

I have just finished lesson #17 on Leica-type shutters. About the same time I started this lesson I received a Canon from a photo dealer to be checked. By studying the lesson and following carefully the directions given for disassembly I had no trouble taking the camera apart. I found the Canon to be nearly identical to the description in the lesson. It was a great help in completing the lesson to have a Leica-type shutter to observe. Before reassembly I checked both curtains for light leaks and cleaned all the exposed parts. Some other student may find that one of his photo dealers has a used camera in his shop with a Leica-type shutter that he would like checked. I think this is an excellent source of study material.

Fred J. Stickel  
Colorado Springs, Colorado

I made arrangements with the manager of a Goodwill Store to buy all their old cameras. By doing this I get them for 25¢ each (sometimes extras thrown in).

Naturally they are mostly box cameras but there is nearly always one or two good ones also. I get 15 to 25 per month. (One had a fine lens with a \$60.00 list price.)

I check them all over. The good box cameras I use shoe polish and black paint on - clean the lens and have no trouble selling them for \$1.00 each. Others I use for parts.

Net result: Some fun, lots of practice - lots of spare parts, a few good (but old) cameras and a very little profit. Net cost: Some labor.

C. L. Van Slyke  
Tempe, Arizona

I would like to take this opportunity to say that I have been most pleased so far with your instructions and I am amazed at how much repair work I am able to do. It is certainly very much worthwhile.

Harold Adams  
Rockport, Massachusetts

THE CAMERA CRAFTSMAN



Following a piece of advice in one of the issues of the Camera Craftsman, I made an arrangement November 5 with the camera section of one of the leading department stores in this area to accept camera repair for me.

Sofar, I have grossed \$20.00 on such work as repairing inexpensive flashguns and box cameras, two shutter repairs, one cleaning job, and one slide projector overhaul. I know there is much more work that I could do for this store, because of the fact that the manager frequently asks me when I will write to the various companies for authorization to do new camera repair work. The manager sends off from 3 to 5 cameras a day for free guarantee work.

My education is far from complete, and I could not handle all the jobs until I have more experience but I have been in the store, and discussed the malfunctions of many of the cameras with the customer. Many of the jobs are simple and comparatively easy even for a novice.

How is it possible for me to get guarantee work, and get paid for it?

What are the necessary qualifications and requirements to be met before a person is accepted as a repairman able to handle this guarantee work?

Any help you can give me on this matter will be greatly appreciated!!

William J. Cummins  
Pensacola, Florida

## THE CAMERA CRAFTSMAN *from*

NATIONAL CAMERA REPAIR SCHOOL

Box 174  
Englewood, Colorado

Dear Mr. Cummins:

It was nice to learn that you are accepting work from a department store in your area.

Unfortunately, the only element that enters into obtaining guarantee work on a large scale is time. Eventually, I am certain that we will be able to help you obtain more of this work. Normally, it is only possible after you have become well recognized and are doing the volume of work that warrants the manufacturers approval of your shop as a guarantee organization.

There is one way in which you can get some of this work, even in your present situation. Even though you must make a charge for the work, it is quite possible that the customer can save money if the company for whom you do the work gives the job to you. The customer must still pay postage for shipping his equipment and there is usually a time delay which can become excessive.

Most Camera Repair Shops tolerate repair work on a guarantee basis rather than use it as a profit making plan. The manufacturers pay a very nominal amount for work done on guarantees. The only advantage sometimes is that you have gained an outlet for getting other work in addition to the guarantee work. The other work is what pays off.

I hope that this is of some help to you. If there is any further information that we can supply, please write again.

C. H. Schmitt  
Instructor

The sketch on page 26 of the text on Internal Synchronization made me think that maybe the "SSA" referred to in the last issue of Camera Craftsman in some form of a shutter analyzer. Am I right?

At any rate, I was toying with the idea of constructing a shutter analyzer using an oscilloscope as described in Service sheet number 5592. If "SSA" is one of these units then I'm ready to get one. If not, I'm still curious!

Chester M. Bruszewski  
Delano, California

(You're Right! You can read all about it in this issue!)

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